IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

5   Applicant(s): Boer et al.
    Case: 8-28-6-6
    Serial No.:   10/672,657
    Filing Date: September 26, 2003
    Group: 2416
10 Examiner: Pawaris Sinkantarakorn

    Title: Method and Apparatus for Detecting a Collision in a Carrier Sense Multiple
                   Access Wireless System

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REPLY BRIEF

    Mail Stop Appeal Brief – Patents
20 Commissioner for Patents
    P.O. Box 1450
    Alexandria, VA 22313-1450

25 Sir:

        Appellants hereby reply to the Examiner's Answer, mailed October 16, 2008
(referred to hereinafter as "the Examiner's Answer"), in an Appeal of the final rejection of
claims 1-10 and 18-23 in the above-identified patent application.
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REAL PARTY IN INTEREST

        A statement identifying the real party in interest is contained in Appellants'
Appeal Brief.

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RELATED APPEALS AND INTERFERENCES

        A statement identifying related appeals is contained in Appellants' Appeal Brief.

STATUS OF CLAIMS

The present application was filed on September 26, 2003 with claims 1 through 23. Claims 11-17 were cancelled in the Amendment and Response to Office Action dated March 7, 2008. Claims 1-10 and 18-23 are presently pending in the above-identified patent application.

5 Claims 1, 2, 5-10, 18, and 20-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wang (United States Patent No. 5,721,733) in view of Currivan et al. (United States Patent Application Publication Number 2003/0026283), and claims 3, 4, 13, 14, and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wang in view of Currivan et al. as applied to claims 1, 2, and 18 above, and further in view of Fukuhara (United States Patent Number

10 6,643,296). Claims 1 and 18 are being appealed.

STATUS OF AMENDMENTS

A statement identifying the status of the amendments is contained in Appellants' Appeal Brief.

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SUMMARY OF CLAIMED SUBJECT MATTER

A Summary of the Invention is contained in Appellants' Appeal Brief.

STATEMENT OF GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

20 Claims 1, 2, 5-10, 18, and 20-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wang in view of Currivan et al.

CLAIMS APPEALED

A copy of the appealed claims is contained in an Appendix of Appellants' Appeal

25 Brief.

ARGUMENT

Independent Claims 1 and 18

Independent claim 1 and 18 were rejected under 35 U.S.C. §102(b) as being anticipated by Wang et al. In particular, the Examiner asserts that Wang discloses a collision
5   detector that monitors a wireless medium for collisions of the acknowledgement message (col. 5, line 66, to col. 6, line 8). Appellants also note that the Examiner acknowledges that Wang does not disclose that the collision detector evaluates an energy level and detects a collision based on the energy level. The Examiner asserts, however, that Currivan et al. discloses a collision detection module that evaluates a power indication signal (citing par. 0072), and detects a
10   collision *based on the evaluated power indication signal* (citing par. 75 and Table 1). In the Advisory Action, the Examiner asserts that Currivan discloses that a comparator receives a SNR indication signal and a threshold signal having a threshold value T2, then the comparator compares these inputs and generates an output signal 459 that indicates the result of this comparison (paragraph 74) and that a collision is detected when the output signal 459, which
15   indicates the average SNR of a burst transmission, is low.

Appellants note that independent claim 11 has been cancelled and independent claim 1 has been amended to conform it to the scope of original claim 18.

First, to be precise, claim 1 does not merely require detect(ing) a collision of an acknowledgement message, as suggested by the Examiner. Rather, claim 1 requires detect(ing) a
20   collision of said acknowledgement message *if a measured energy level exceeds a predefined threshold.* The Examiner does not allege that Wang discloses a collision detector that monitors a wireless medium for collisions of an acknowledgement message *if a measured energy level exceeds a predefined threshold,* and Appellants find *no* disclosure or suggestion of this feature in Wang.

25   Appellants also note that, in par. 0076 of Currivan et al., it is clear that output signal 457 indicates the power of the data portion of a burst transmission. In Table 1, it is clear that output signal 457 does **not** correlate with whether a collision is detected. In fact, a collision can be detected if the output signal 457 is high (second row), medium (fourth row), low (sixth

row) or high (seventh row). Thus, a collision is *not* detected in Currivan et al. *"if a measured energy level exceeds a predefined threshold,"* as required by independent claim 1.

Regarding the Examiner's assertion that Currivan discloses that a collision is detected when the output signal 459 indicates the average SNR of a burst transmission is low, Appellants note that a SNR is a *signal-to-noise **ratio*** and is *not* a measured *energy level* (i.e., not a measured level of energy), as would be apparent to a person of ordinary skill in the art. Currivan does *not* disclose or suggest determining a *measured energy level* or determining *if a measured energy level* exceeds a predefined threshold.

Thus, even as combined in the manner suggested by the Examiner, Wang and Currivan *do not teach every element of the independent claims.* Furthermore, based on the KSR considerations discussed hereinafter, the combination/modification suggested by the Examiner is not appropriate.

<u>*KSR* Considerations</u>

An Examiner must establish "an apparent reason to combine ... known elements." *KSR International Co. v. Teleflex Inc. (KSR)*, 550 U.S. ___, 82 USPQ2d 1385 (2007). Here, the Examiner merely states that it would have been obvious to implement a collision detection module as taught by Currivan into the collision detecting apparatus of Wang since it provides a more efficient transmission method.

Appellants are claiming a new technique for collision detection in a communication network. There is *no* suggestion in Wang or in Currivan, alone or in combination, for a collision detector that monitors a wireless medium for collisions of said acknowledgement message *if a measured energy level exceeds a predefined threshold.*

Currivan's teaching to utilize a SNR ratio ***teaches away*** from the present invention. The *KSR* Court discussed in some detail United States v. Adams, 383 U.S. 39 (1966), stating in part that in that case, "[t]he Court relied upon the corollary principle that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." (KSR Opinion at p. 12). Thus, there is no reason to make the asserted combination/modification.

Thus, Wang, Wales, Currivan, and Fukuhara, alone or in combination, do not disclose or suggest a collision detector that monitors a wireless medium for collisions of said acknowledgement message *if a measured energy level exceeds a predefined threshold,* as required by independent claim 1, and do not disclose or suggest monitoring said wireless

5   communication network to detect a collision of said acknowledgement message *if a measured energy level exceeds a predefined threshold,* as required by independent claim 18.

Conclusion

The rejections of the cited claims under section 103 in view of Wang, Wales,

10   Currivan, and Fukuhara, alone or in any combination, are therefore believed to be improper and should be withdrawn. The remaining rejected dependent claims are believed allowable for at least the reasons identified above with respect to the independent claims.

The attention of the Examiner and the Appeal Board to this matter is appreciated.

Respectfully,

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Date: November 12, 2008

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APPENDIX

1. A first wireless communication device, comprising:

a controller capable of receiving an acknowledgement (ACK) message
transmitted by a second wireless communication device in response to a message transmitted by
said first wireless communication device, and

a collision detector that monitors a wireless medium for collisions of said
acknowledgement message if a measured energy level exceeds a predefined threshold.

2. The first wireless communication device of claim 1, wherein said collision
detector evaluates an energy level and detects a collision based on said energy level.

3. The first wireless communication device of claim 2, wherein said collision
detector includes a payload detector and detects a collision based on a detected payload.

4. The first wireless communication device of claim 3, wherein said collision
detector includes a preamble detector and detects a collision based on a detected preamble.

5. The first wireless communication device of claim 1, wherein said collision
detector is activated after said first wireless communication device transmits data.

6. The first wireless communication device of claim 1, wherein said collision
detector does not detect a collision if an ACK message or data header is received.

7. The first wireless communication device of claim 1, wherein said device is
implemented in accordance with the IEEE 802.11 Standard.

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8. The first wireless communication device of claim 1, wherein said controller determines if said second wireless communication device correctly received said transmitted message by monitoring said wireless medium.

5   9. The first wireless communication device of claim 1, wherein said controller determines that said second wireless communication device did not likely receive said message if a collision is detected.

10. The first wireless communication device of claim 1, wherein said controller

10   determines that said collision was a cause of not receiving said ACK message.

11-17 (Cancelled).

18. A method for detecting a collision in a wireless communication network, said

15   method comprising the steps of:

determining if an acknowledgement message is received in response to transmitted data; and

monitoring said wireless communication network to detect a collision of said acknowledgement message if a measured energy level exceeds a predefined threshold.

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19. The method of claim 18, wherein said monitoring step further comprises the step of detecting a payload and said collision detection is further based on said detected payload.

20. The method of claim 18, wherein said monitoring step further comprises the

25   step of detecting a preamble and said collision detection is further based on said detected preamble.

21. The method of claim 18, wherein said monitoring step is performed after said data is transmitted.

22. The method of claim 18, wherein said monitoring step does not detect a collision if an ACK message or data header is received.

23. The method of claim 18, wherein said method is implemented in accordance with the IEEE 802.11 Standard.

EVIDENCE APPENDIX

There is no evidence submitted pursuant to § 1.130, 1.131, or 1.132 or entered by the Examiner and relied upon by appellant.

RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 CFR 41.37.